

CHEM 1202
Introductory Chemistry

Section 02: MWF 12:30 PM – 1:30 PM, Lockett 2, fall 2009

Section 03: MWF 2:30 PM – 3:30 PM, Lockett 10, fall 2009

Instructor: Dr. Catherine Situma **Email:** csitum1@tigers.lsu.edu
Office: 301 Williams **Office Phone:** (225) 578 3649
Office hours: W 10:00AM-11:00 AM or by appt

Goals: This course is meant to help students understand basic chemical principles while developing problem solving skills

Textbook: LSU customized edition of chemistry, The Central Science, 11th ed., Brown, Lemay, Burstein, and Murphy, Pearson custom publishing, 2009.

Topics: Thermochemistry Chemical Kinetics Chemical Equilibrium
Acid-Base Equilibrium Chemical Thermodynamics Electrochemistry
Additional Aspects of Aqueous Equilibria

Grading: The overall class grade will be determined through homework/quizzes, class Participation (clickers), regular exams, and a comprehensive final exam. Both the lowest homework/quiz and regular exam grades will be dropped. Each exam will emphasize the topics covered since the last exam and will also cover some review material. The comprehensive final exam will cover all material addressed during the semester. Students are required to bring a pencil, scientific calculator (no graphing calculators, PDA's or other electronic devices capable of massive data storage) and 8 ½" X 11" scantron sheets.

Homework/quizzes:	20 %
Regular Exams:	60 %
Participation / Clickers:	5 %
Final Exam:	15 %

GRADE	% Points
A	90-100
B	80-89
C	70-79
D	60-69
F	Below 60

Policies: Class attendance is required and LSU's code of student conduct will be in force at all times especially the parts pertaining academic dishonesty and classroom conduct. No make up exams will be given. If an exam is missed due to excused absence then the prorated final exam grade will be substituted for the missing exam.

CHEM 1202 Syllabus
Fall 2009

Text: *Chemistry: The Central Science*, Brown, LeMay, Bursten & Murphy, 11th ed., Prentice Hall, 2009

Chapter 5: Thermo chemistry

- 5.1 The Nature of Energy
- 5.2 The First Law of Thermodynamics
- 5.3 Enthalpy
- 5.4 Enthalpies of Reaction
- 5.5 Calorimetry
- 5.6 Hess's Law
- 5.7 Enthalpies of Formation

Chapter 14: Chemical Kinetics

- 14.1 Factors that Affect Reaction Rates
- 14.2 Reaction Rates
- 14.3 Concentration and Rate
- 14.4 The Change of Concentration with Time
- 14.5 Temperature and Rate
- 14.6 Reaction Mechanisms
- 14.7 Catalysis

Chapter 15: Chemical Equilibrium

- 15.1 The concept of Equilibrium
- 15.2 The Equilibrium Constant
- 15.3 Interpreting and Working with Equilibrium Constants
- 15.4 Heterogeneous Equilibrium
- 15.5 Calculating Equilibrium Constants
- 15.6 Applications of Equilibrium Constants
- 15.7 Lechatelier's Principle

Chapter 16: Acid-Base Equilibria

- 16.1 Acids & Bases: A Brief Review
- 16.2 Bronsted-Lowry Acids and Bases
- 16.3 The Autoionization of Water
- 16.4 Strong Acids and Bases
- 16.5 The pH Scale
- 16.6 Weak Acids
- 16.7 Weak Bases
- 16.8 Relationship between K_a and K_b
- 16.9 Acid-Base Properties of Salt Solutions
- 16.10 Acid-Base Behavior & Chemical Structure
- 16.11 Lewis Acids and Bases

Chapter 17: Additional Aspects of Aqueous Equilibria

- 17.1 The Common -ion Effect
- 17.2 Buffered Solutions
- 17.3 Acid-Base Titrations
- 17.4 Solubility Equilibria
- 17.5 Factors That Affect Solubility

Chapter 19: Chemical Thermodynamics

- 19.1 Spontaneous Processes
- 19.2 Entropy and the Second Law of Thermodynamics
- 19.3 A molecular Interpretation of Entropy
- 19.4 Entropy Changes in Chemical Reactions
- 13.1 The Solution Process
- 19.5 Gibbs Free Energy
- 19.6 Free Energy & Temperature
- 19.7 Free Energy & the Equilibrium Constant

Chapter 20: Electrochemistry

- 20.1 Oxidation States
- 4.4 Oxidation-Reduction Reactions
- 20.2 Balancing Oxidation-Reduction Equations
- 20.3 Voltaic Cells
- 20.4 Cell EMF under standard Conditions
- 20.5 Free Energy and Redox Reactions
- 20.6 Cell EMF under Nonstandard Conditions
- 20.7 Batteries and Fuel Cells
- 20.8 Corrosion
- 20.9 Electrolysis